

Appl. No. 10/030,735  
Amdt. dated December 20, 2004  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group

PATENT

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A peptide ~~comprising~~ consisting of the sequence  $R_1$ - $X_1$ -V-R- $X_4$ - $R_2$  or partial or full retro-inverso sequences thereof, wherein  $X_1$  is selected from the group consisting of N, Q, and D and S; and  $X_4$  is selected from the group consisting of L and F;  $R_1$  is a hydrogen or ~~a peptide of from~~ 1 to 6 amino acids, an acyl or an aryl group; and  $R_2$  is a ~~peptide of from~~ 1 to 3 amino acids, a hydroxide or an amide, provided that the peptide binds  $\alpha 3 \beta 1$  integrin and does not comprise the sequence FQGV LQNVR FVF (SEQ ID NO:6), or FRGCVRNLRLSR (SEQ ID NO:12), or DVRF (SEQ ID NO:54).

2. (Currently amended) The peptide of claim 1 ~~containing from about 4 amino acids to about~~, wherein the peptide contains the sequence  $X_1$ -V-R- $X_4$  and is up to 12 amino acids in length.

3. (Currently amended) The peptide of claim 1 wherein  $R_1$  is a peptide ~~comprising~~ consisting of the sequence selected from the group consisting of FQGV LQ (SEQ ID NO:13), FAGV LQ (SEQ ID NO:14), FQGV AQ (SEQ ID NO:15), FQGV LA (SEQ ID NO:16), and FQGV LN (SEQ ID NO:17).

4. (Currently amended) ~~The peptide of claim 1~~ A peptide that binds  $\alpha 3 \beta 1$  integrin, wherein said peptide ~~comprises at least one~~ consists of a sequence selected from the group consisting of FQGV LQQVR FVF (SEQ ID NO:20), FQGV LQSVR FVF (SEQ ID NO:21), acQGV LQNVR F (SEQ ID NO:22), FQGV LNNVR FVF (SEQ ID NO:24), AQGV LQNVR FVF (SEQ ID NO:25), FAGV LQNVR FVF (SEQ ID NO:26), FQGV AQNVR FVF (SEQ ID NO:27),

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FQGV LQNVR FVA (SEQ ID NO:28), FQGV LANVR FVF (SEQ ID NO:29), FQGV LQNVR FV (SEQ ID NO:30), QGV LQNVR FVF (SEQ ID NO:31), and FQGV LQNVR F (SEQ ID NO:32).

5. (Currently amended) The peptide of claim 1 wherein ~~X<sub>1</sub>-X<sub>2</sub>-X<sub>3</sub>-X<sub>4</sub>~~ X<sub>1</sub>-V-R-X<sub>4</sub> is selected from the group consisting of NVRF (SEQ ID NO:51), ~~SVRF (SEQ ID NO:52)~~, and QVRF (SEQ ID NO:53).

6. (Canceled)

7. (Currently amended) The peptide of claim 1 that ~~comprises~~ contains at least one D-amino acid.

8. (Currently amended) A retro-inverso synthetic peptide ~~comprising~~ consisting of the amino acids sequence, from C-terminal (left) to N-terminal (right): ri- R'<sub>1</sub>-X'<sub>1</sub>-X'<sub>2</sub>-X'<sub>3</sub>-X'<sub>4</sub>-R'<sub>2</sub>, wherein ri denotes a retro-inverso peptide sequence and all amino acids are D amino acids; X'<sub>1</sub> is selected from the group consisting of N, Q, D and S; X'<sub>2</sub> is selected from the group consisting of V, I and L; X'<sub>3</sub> is selected from the group consisting of R and K; and X'<sub>4</sub> is selected from the group consisting of V, I, L and F; R'<sub>1</sub> is a hydrogen or ~~a peptide of from~~ 1 to 6 amino acids, a hydroxide or an amide; and R'<sub>2</sub> is ~~a peptide of from~~ 1 to 3 amino acids, an acyl or an aryl group, wherein the synthetic peptide binds  $\alpha$ 3 $\beta$ 1 integrin.

9. (Currently amended) The peptide of claim 8 ~~containing from about 4 amino acids to about~~ wherein the peptide contains the sequence X<sub>1</sub>-V-R-X<sub>4</sub> and is up to 12 amino acids in length.

10. (Currently amended) A peptide ~~comprising~~ consisting of the sequence FQGV LQNVR FVF (SEQ ID NO:6) wherein every amino acid in said sequence is a D-amino acid.

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11-12. (Canceled)

13. (Currently amended) A ~~pharmaceutical~~ composition comprising a peptide according to claim 1 and a pharmaceutically acceptable carrier.

14. (Currently amended) A ~~sterile~~ composition comprising a peptide according to claim 1 ~~[[and]]~~ in a sterile aqueous solution.

15-19. (Canceled)

20. (Currently amended) An in vitro method of inhibiting adhesion of a cell expressing  $\alpha\beta 1$  integrin to an extracellular matrix comprising contacting said cell with a peptide according to claim 1.

21. (Original) The method of claim 20 wherein the extracellular matrix comprises TSP1 or laminins.

22. (Original) The method of claim 20 wherein said contacting takes place *in vitro*.

23. (Original) The method of claim 20 wherein said cell comprises an epithelial or an endothelial cell.

24. (Original) The method of claim 20 wherein said cell is a tumor cell.

25. (Original) The method of claim 20 wherein said cell is a breast carcinoma cell or a small cell lung carcinoma.

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26. (Currently amended) An in vitro method of inhibiting  $\alpha 3 \beta 1$  integrin-mediated cell motility, comprising contacting a cell with a peptide according to claim 1.

27. (Canceled)

28. (Original) The method of claim 26 wherein the cell is an epithelial cell, an endothelial cell or a malignant cell.

29. (Currently amended) An in vitro method of inhibiting proliferation of endothelial cells, comprising contacting said cells with a peptide according to claim 1.

30. (Currently amended) An in vitro method of inhibiting proliferation of small cell lung carcinoma cells, comprising contacting said cells with a peptide according to claim 2.

31-45. (Canceled)

46. (Currently amended) A peptide ~~comprising~~ consisting of the sequence  $R_1$ -D-V-R-F- $R_2$ , or partial or full retro-inverso sequences thereof, wherein D-V-R-F is SEQ ID NO:54,  $R_1$  is a hydrogen or a ~~peptide of from~~ 1 to 6 amino acids, an acyl or an aryl group; and  $R_2$  is a ~~peptide of~~ 2 or 3 amino acids, a hydroxide or an amide, provided that the peptide binds  $\alpha 3 \beta 1$  integrin.

47. (Currently amended) The peptide according to claim 46 ~~comprising~~ consisting of the sequence FQGVLDVRFVF (SEQ ID NO:19).

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48. (New) The peptide of claim 46, wherein the peptide contains the sequence DVRF (SEQ ID NO:54) and is up to 12 amino acids in length.

49. (New) The peptide of claim 46 wherein R<sub>1</sub> is a peptide consisting of the sequence selected from the group consisting of FQGVLP (SEQ ID NO:13), FAGVLQ (SEQ ID NO:14), FQGVAQ (SEQ ID NO:15), FQGVLA (SEQ ID NO:16), and FQGVLN (SEQ ID NO:17).

50. (New) The peptide of claim 46 that contains at least one D-amino acid.

51. (New) A composition comprising a peptide according to claim 46 and a pharmaceutically acceptable carrier.

52. (New) A composition comprising a peptide according to claim 46 in a sterile aqueous solution.